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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,843	12/17/2001	Lee L. Xu	01PAR005	3198

7590 10/21/2003

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EXAMINER

KANG, JULIANA K

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/023,843	XU ET AL.	
	Examiner	Art Unit	
	Juliana K. Kang	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 8, 9, and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al (JP 405088049 A), and further in view of Hashizume (U.S. Patent 6,547,455 B1).

3. Regarding claims 1, 5, 9, 13, and 15, Kobayashi et al disclose an optical module comprising a lens array (20) for use in focusing light between a set of photoactive components (81-1) and a set of optical fibers (31) comprising: a plurality of biconvex lenses (25) arrayed on the same glass plate 21 (collinearly and contiguously positioned in a lateral direction). However, Kobayashi et al fails to teach lenses having greater height than width. Hashizume teaches an optical module having a lens placed between an optical fiber within ferrule and a light-emitting device. Hashizume further teaches that the lens structure has a cylindrical shape wherein the height is greater than the width (see column 3 lines 33-45) in order to improve the coupling efficiency between the optical fiber and the photoactive component (see column 6 lines 27-39). Hashizume further teaches that the cylindrical (greater height than width) lens provides coupling efficiency of 45% larger than the conventional spherical lenses. Thus, it would have

been obvious to one with ordinary skill in the art at the time the invention was made to use lenses with greater height than width in Kobayashi et al in place of spherical lenses as taught by Hashizume in order to improve the coupling efficiency.

4. Regarding claims 3, 8, and 11, Hashizume teaches lens structure that is formed with a one-piece member molded of transparent resin (see claim 7 of Hashizume).

5. Regarding claims 4, 6, 12, 14, and 16, even though Kobayashi et al/Hashizume do not teach the lenses with a height which is approximately 1.5 times their width, it would have been obvious to one with ordinary skill in the art at the time the invention was made to use such lenses, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

6. Claims 2, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al/Hashizume and further in view of Ishida et al (JP 409243867 A).

7. As described above, Kobayashi et al/Hashizume teach the claimed invention except guide holes and guide pins. Ishida et al teach coupling of a plurality of optical fiber, a lens array and a PD/LD array using guiding holes and guiding pins. Thus, it would have been to one with ordinary skill in the art to use guide pins and guide holes in Kobayashi et al/Hashizume as taught by Ishida et al in order to provide better alignment between optical fibers and the optical components.

8. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al (JP 409243867 A) and further in view of Hashizume (U.S. Patent 6,547,455 B1).

9. Ishida et al disclose a multi-fiber optical module comprising a lens array (8), a photoactive components (7) attached to a carrier assembly (5), optical fibers placed in a ferrule having alignment holes (9) and a set of guide pins (8). However, Ishida et al does not specifically teach the lens array structure. Hashizume teaches an optical module having a lens placed between an optical fiber within ferrule and a light-emitting device. Hashizume further teaches that the lens structure has a cylindrical shape wherein the height is greater than the width (see column 3 lines 33-45) in order to improve the coupling efficiency between the optical fiber and the photoactive component (see column 6 lines 27-39). Hashizume further teaches that the cylindrical (greater height than width) lens provides coupling efficiency of 45% larger than the conventional spherical lenses. Thus, it would have been obvious to one with ordinary skill in the art at the time the invention was made to use lenses with greater height than width in Ishida et al as taught by Hashizume in order to improve the coupling efficiency between optical fibers and optical components.

10. Regarding claims 18 and 19, Ishida et al show towers (23, see Fig. 3) with elevated section (22) wherein the guide pins are mounted.

11. Regarding claim 20, even though Ishida et al /Hashizume do not teach the lenses with height which is approximately 1.5 times their width, it would have been obvious to one with ordinary skill in the art at the time the invention was made to use such lenses, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

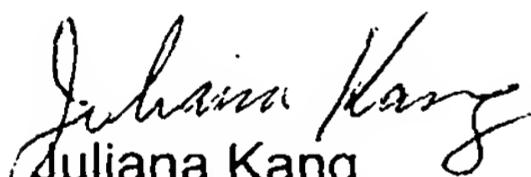
Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shibuya et al (U.S. Patent 6,340,251 B1) teach a multi-channel optical coupling module.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (703) 305-6259. The examiner can normally be reached on Mondays and Thursdays 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (703) 308-4819. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-3072.


Juliana Kang
October 16, 2003